

Remarks/Arguments:

Claims 10-19 stand finally rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,231,134 (Fukasawa '134) in view of either U.S. Patent No. 6,709,075 to Crombez et al. (Crombez '075) or JP 9-37407 to Ibaraki et al. (JP 9-37407 corresponds to U.S. Patent No. 5,915,801, referenced on the Supplemental Information Disclosure Statement submitted with applicants December 19, 2005 Response and acknowledged in the January 5, 2006 Advisory Action, and is hereinafter referred to as Taga '801). Applicants respectfully traverse these rejections.

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. §2143.

Independent claim 10 recites a method for coordinating the application of regenerative and anti-lock brake systems wherein the regenerative brake system is switched off upon entry into an ABS control phase and comprising the steps of applying post ABS regenerative braking by the regenerative brake system at the termination of the ABS control phase, a value of the post ABS regenerative braking being based on the determined criteria with the post ABS regenerative braking being in a modified form compared to a regenerative braking value prior to the entry into the ABS control phase.

As explained in applicants December 19, 2005 Response, Figures 8A and 8B of Fukasawa '134, and step 119, are cited in the Office Action as appearing to indicate that regenerative brake commands are generated upon ABS termination, and that the command values are compensated when compared to previous regenerative brake commands. Applicants respectfully disagree.

As explained in the December 19, 2005 Response, Fukasawa '134 corresponds to DE 198 42 472 A1 which is referenced in the Background section of present application. As explained therein, while the Fukasawa system includes a vehicle brake system with friction devices and regenerative brake devices, the regenerative brake system stays disconnected during ABS

control, but is simply readmitted after the ABS control, thereby shifting the total braking power to the driving axle. A possible result is an undesirable repeating change-over between ABS - regenerative braking - ABS - etc.

The simple readmittance of the regenerative brake system is explained in Fukasawa '134 at col. 39, Ins. 47-62.

If the condition for terminating the anti-lock brake control or the condition for permitting the regenerative braking torque control is satisfied, the control flow goes to steps S117, S118 and S119 to reset the anti-lock brake control flag to "0", permit the control of the regenerative braking torque and permit the regenerative braking torque compensating pressure decrease control and the regenerative braking torque compensating pulse number increase control. In step S118, the directional control valves 308, 310 and the various solenoid-operated shut-off valves are restored to their original positions. In step S119, the motor control device 42 is supplied with the information for permitting the control of the regenerative braking control, to permit the regenerative braking torque compensating pressure decrease control and the regenerative braking torque compensating pulse number increase control. (emphasis added).

Furthermore, Fukasawa '134 explains at col. 33, Ins. 38-43, "the motor control device 42 supplies the hydraulic braking torque controller 360 with information representing the actual regenerative braking torque. This information is in the form of ON/OFF signals indicating whether the actual regenerative braking torque is smaller or not smaller than a predetermined value. That is, the ON signal indicates that the actual regenerative braking torque is equal to or larger than the predetermined value, while the OFF signal indicates that the actual regenerative braking torque is smaller than the predetermined value."

Again, Fukasawa '134 does not apply post ABS regenerative braking at a value based on determined criteria. The January 5, 2006 Advisory Action cites a brake demand signal from the brake switch 250 as providing a determined criteria. However, even if such were a determined criteria, the regenerative brake value is not based on such criteria, but instead is simply switched back to permitting regenerative braking, in an on/off manner, independent of the value of the brake demand signal. Fukasawa '134 does not teach or suggest controlling the post ABS regenerative brake value based on determined criteria at the termination of the ABS control phase.

Crombez '075 and Taga '801 do not overcome the shortcomings of Fukasawa '134. Crombez '075 is similar to Fukasawa '134 in that upon termination of ABS control, the system simply "returns the regenerative brake and friction brake torque requests to those determined by step 36", which is the torque arrangement prior to ABS control. See col. 4, ln.41 through col. 5, ln. 6. Crombez '075 does not teach or suggest supplying post ABS regenerative braking based on determined criteria.

Taga '801 is directed to a system of utilizing control maps to control a braking torque based on various vehicle parameters. Taga '801 does not address in any manner the relationship of friction braking and regenerative braking during or after ABS control.

None of the cited references, alone or in any reasonable combination, teaches or suggests each limitation of the claimed invention. Claims 11-21 all ultimately depend from claim 10 and are therefore allowable for, *inter alia*, the reasons set forth above.

Furthermore, claim 20 further recites "the regenerative brake system has a maximum regenerative braking value and the post ABS regenerative braking is limited for a given period to a predetermined limit value which is less than maximum regenerative braking value." Claim 21 further recites "wherein the predetermined limit value is approximately 80% or less than maximum regenerative braking value." None of the cited references, alone or in any reasonable combination, teaches or suggests limiting the regenerative braking value for a given period to a limit value less than the maximum regenerative braking value, and more particularly, to a limit value approximately 80% or less than maximum regenerative braking value..

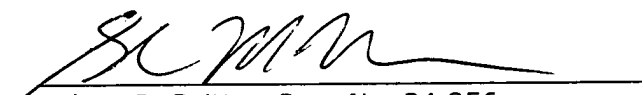
It is respectfully submitted that each of the pending claims is in condition for allowance. Early reconsideration and allowance of each of the pending claims are respectfully requested.

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Amendment Dated January 17, 2006
Reply to Office Action of October 17, 2005

PC10334US

If the Examiner believes an interview, either personal or telephonic, will advance the prosecution of this matter, it is respectfully requested that the Examiner get in contact with the undersigned to arrange the same.

Respectfully submitted,


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Dated: January 17, 2006

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